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Stratigraphy of cladocera in a core from a Yamal peninsula lake (Arctic Russia)

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Abstract

© SGEM2016.Arctic regions are most sensitive to global climate change and Arctic waters are an excellent indicator of a current increase in air temperature on the planet. Yamal peninsula is one of a scientifically interesting part of the Arctic. It is a lake-swamp system with unique hydrological, biological, and geochemical particularities. On the one hand, the most part of water objects are under marine influence according to Yamal geographical position, at low level above the see; on the other hand, objects have a strong anthropogenic impact from oil and gas production. We studied a short sediment core from a lake in Pyasedayakha river catchment area. A total of 24 cladoceran taxa, of which 11 are in the family Chydoridae (chydorids), were identified from the 28 samples. The cladoceran stratigraphy was divided into three faunal zones and was characterized by the dominance of Chydoms sphaericus s.l, Bosmina (Eubosmina) sp., Bosmina longirostris and Alona affinis. Cladoceran assemblage changes occurred coincident with the timing of known regional warming and were strongly linked to estimated changes in primary production. Last warming has resulted in increase of the planktonic taxon Bosmina spp.and coincided with a decrease in the littoral taxa Chydorus sphaericus s.l.

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Keywords

Palaeoclimatology, Palaeolimnology, Russian Arctic, Subfossil Cladocera, Yamal peninsula